A case series of missed blunt traumatic hepatic injury

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Case 1: An 83-year-old lady was admitted to the Emergency Department at St Georges Hospital in January 2009 after having fallen down a flight of 12 stairs that morning. The fall was entirely mechanical, she was alert and orientated upon admission. Primary survey revealed her to be taccyoponeiac (21 bpm), hypoxic pO_2 9.72 and to have a postural blood pressure drop of 70 mmHg. Secondary survey picked up severe pain in the right lower chest wall worse during inspiration. A CXR showed right lower rib fractures. She was referred to the medics as a possible PE. She was later reviewed by them and discharged with analgesia. She re-presented to the emergency department 5 days later with sever RUQ pain, anorexia and vomiting and was diagnosed with acute cholecystitis. After surgical review she was noted to have a falling Hb and this combined with the history prompted a CT of the abdomenthis revealed a large sub-capsular hematoma centered around segment 4b (Fig. 1a and b).

Case 2: A 53-year-old lady was admitted to St Georges Hospital in September 2008 having crashed her push bike into a stationary car. The impact resulted in her being thrown over the handlebars and coming to rest on the floor with a brief LOC. She was alert and orientated at the scene and upon admission was treated in accordance with ATLS principals. The primary survey revealed no abnormality. Due to the history of LOC a CT scan of the head was arranged. Whilst in the CT scanner she developed severe abdominal pain became SOB and dropped her blood pressure to 90 mmHg systolic. The decision was taken to scan her abdomen. The scan of the abdomen revealed a massive sub-capsular hepatoma with IVC thrombus (Fig. 2a–c).

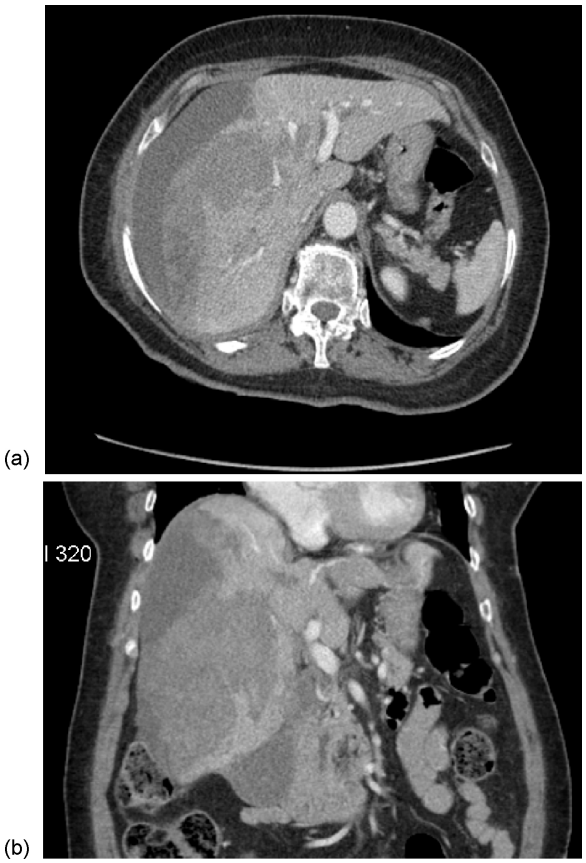
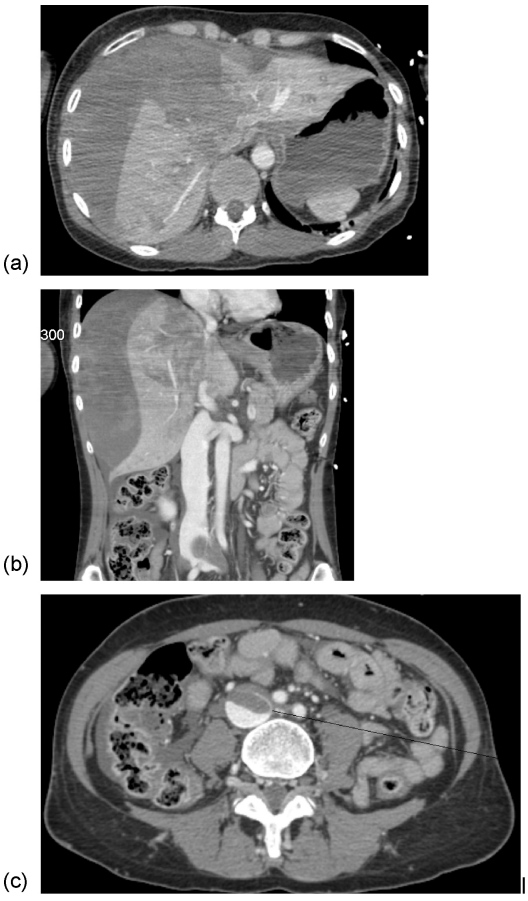


Fig. 1.



line shows IVC

Fig. 2.

Discussion: The liver is the second most commonly injured organ in blunt trauma and has a significant associated morbidity and mortality. Damage to the liver remains the most common cause of death following abdominal injury, being responsible for more than 50% of all deaths after blunt abdominal trauma.

In both these cases the abdominal examination was normal, but the mechanisms were significant!

The diagnosis was missed despite there being a major injury and this raises issues about how we can make steps to diagnose these injuries at an early stage. The role of early whole body CT? FAST scan?

The IVC thrombus reported in the second case has been described in relation to hepatic injury but is far more unusual.

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A case of concomitant fractures involving whole lumbar spine

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Introduction: Multiple contiguous injuries of the spine tend to follow a more complicated mechanism of injury and likely to be more severe than single-level injuries. We report an interesting case of a 20-year-old road traffic accident victim with concomitant

spinal fractures involving all five lumbar vertebrae posing significant therapeutic challenges.

Case report: A 20-year-old gentleman presented with multiple injuries following a road traffic accident (restrained driver at 70 mph, side impact with sign-post, ejected from side-window, falling approximately 30 feet height). Plain radiographs and/or CT-scans showed L2 unstable burst fracture, L5 stable burst fracture and multiple posterior element fractures including several pedicles from L1-to-L5 vertebrae bilaterally. Neurological examination showed hypoaesthesia over right L2 dermatomal distribution. Fractures of L1 to L5 pedicles posed technical difficulties for treating him with a pedicle screw construct. Bridging construct involving lower thoracic spine and pelvis was decided to be inappropriate. He was treated non-operatively with bed rest for initial 3-month period to allow pedicles to heal. Following mobilisation, he developed a post-traumatic kyphosis (35°) at L2 level. This was treated with L2-pedicle subtraction osteotomy, T12-to-L4 posterior instrumentation and fusion using iliac crest bone grafts. The postoperative recovery was uneventful except for iliac crest donor-site morbidity lasting for approximately 6 months. At 2-year follow-up, the patient reported no pain, good spinal mobility and back to work as a fork lift truck driving.

Conclusion: On seeing double non-contiguous fractures of the lumbar spine, one should carefully examine CT scans to confirm or rule out injuries to the adjacent and intervening levels, line of propagation of injury and subsequent influence on operative management. This report stresses the message for general orthopaedic trauma surgeons as not to forget treating such complex spinal trauma by non-operative mode. If post-traumatic kyphosis develops, then it could be dealt later and the most mobile motion-segments of the lumbar spine can be preserved.

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A new technique for stabilisation of posteriorly displaced adolescent medial clavicle physeal fractures

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Purpose: To describe a novel technique for the treatment of an unusual fracture pattern and report the results.

Medial clavicle injuries are uncommon and in adolescents are more likely to be Salter-Harris I or II fractures due to the relatively late fusion of the medial physis. Most commonly the epiphysis stays in situ and the clavicle displaces posteriorly and medially. If treated conservatively, 50% remain symptomatic and both thoracic outlet syndrome and pneumothorax have been reported. Closed reduction has a high redislocation rate and a variety of surgical techniques have been described, many of which require the use of metal work which then needs to be removed.

Method and results: Since 2003 we have used a novel technique utilising absorbable PDS sutures and the thick periosteum in this age group to effect the repair. 6 patients, 5 male, age range 16–19 were treated. 4 sustained the injury as a result of Rugby, 1 from a simple fall and 1 from an assault. There was no neurovascular compromise although 50% reported difficulty swallowing. CT confirmed the diagnosis of a Salter-Harris Type I or II injury. Closed reduction was attempted in all cases but failed.

Using 4 paired 1.6 mm drill holes in the medial clavicle 4 0 PDS sutures were passed through both bone and the periosteum. The sutures were then tied securing the bone. In 4 cases there was an uneventful recovery, 1 had the scar revised for cosmetic reasons and one sustained an anterior displacement in a fall down stairs 2 weeks after surgery. The procedure was revised uneventfully. At final review all patients were asymptomatic and all had returned to their pre-injury level of sports.

Conclusion: The authors conclude that this is a safe reproducible technique which produces good results in this uncommon fracture. It has the added benefit that it does not require later removal of metalwork.

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A new unit—how it compares with established institutions in the National Clinical Audit for Falls and Bone Health in Older People

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Aim: To evaluate how a new Trauma and Orthopaedic Unit in Craigavon Area Hospital (CAH), Northern Ireland opened on the 3rd February 2008, compared with established institutions in the National Clinical Audit for Falls and Bone Health in Older People.

Patients and methods: We audited the standard of care received by 40 consecutive patients aged 65 years and over, attending CAH A&E with a fractured hip during March 2008 to June 2008. We did this by reviewing all the patients notes and filling out proformas collecting the information required by the national guidelines.

Results: We found that in many areas the new unit was doing better than the national averages, including the use of pressure relieving equipment (87.5% vs 54%), thromboprophylaxis (97.5% vs 79%), pre-op medical assessment (62.5% vs 28%), use of hip fracture care pathways (100% vs 48%), post-op multidisciplinary meeting's (85% vs 39%), falls assessment (80% vs 45%) and osteoporosis assessment (97.5% vs 35%).

For the time taken from registration to surgery, 70% (28/40) where operated on within 48 h (69% nationally).

However it did highlight areas which could be improved. Only 2.5% (1/40) of patients waited <120 min in A&E prior to transfer to the ward (20% nationally), with 60% (24/40) waiting >240 min.

Following this we identified areas for improvement and will institute a fast tracking policy for patients attending A&E with hip pain and suspected hip fractures.

Conclusion: Overall, whilst the Trauma and Orthopaedic Unit at CAH has performed well, it should be borne in mind that the aim is 100% for these targets rather than the national average indicating a wide variation in the care of these elderly patients nationally.

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Novel method for maintaining reduction in Vancouver B periprosthetic fractures

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Introduction: Peri-prosthetic fractures of the femur following hip replacement are serious complications that can prove difficult to treat. Whilst the incidence of femoral fractures associated with primary joint replacement has been reported to be less than 1%, the increasing numbers of primary arthroplasty mean this is an ever-increasing problem.

Vancouver type B fractures are the most common fracture pattern. When the femoral component is well fixed, open reduction and internal fixation is recommended in all but exceptional cases. Many different methods of fixation have been suggested. Biplanar fixation with onlay cortical strut allografting and compression plates has emerged as the favourable option for these fractures. However, maintenance of reduction whilst applying biplanar fix-